

Amendments to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

1. (Currently Amended) ~~A high-speed~~ A high-speed driving method of a pressure cylinder including: a moving step of moving a piston to a target position by supplying and discharging compressed air to and from a head-side pressure chamber and a rod-side pressure chamber on opposite sides of the piston of the pressure cylinder by a head-side servo valve and a rod-side servo valve individually connected to the pressure chambers; a clamping step of bringing a pressure member at a tip end of a piston rod coupled to the piston in contact with a workpiece; and a pressing force applying step of pressing the workpiece with the pressure member,

wherein, in the moving step, which of a head-side end and a rod-side end of the pressure cylinder the target position is closer is sensed, the pressure chamber on a side of the end far from the target position is pressure-controlled so that a pressure of the pressure chamber is maintained at a set value by the servo valve connected to the pressure chamber, and the pressure chamber on a side of the end close to the target position is positioning-controlled so as to stop the piston in the target position by controlling coming in and out of the compressed air by the servo valve connected to the pressure chamber,

in the clamping step, control for allowing the pressure member to touch the workpiece softly by making an exhaust opening degree of the rod-side servo valve constant is carried out when a distance between the pressure member and the workpiece has become equal to or shorter than a certain distance, and

in the pressing force applying step, both servo valves are controlled so that the pressure of the head-side pressure chamber becomes higher than the pressure of the rod-side pressure chamber by a set value.

2. (Original) A method according to claim 1, wherein, in the pressing force applying step, an exhaust side of the rod-side servo valve is fully opened and simultaneously the head-side servo valve is controlled so that a pressure difference between both pressure chambers becomes equal to the set value.

3. (Original) A method according to claim 1, wherein, in the pressing force applying step, an air supply side of the head-side servo valve is fully opened or brought into a certain high-pressure outputting state and simultaneously the rod-side servo valve is controlled so that a pressure difference between both pressure chambers becomes equal to the set value.

4. (Currently Amended) ~~A method~~ A method according to any one of claims 1 to 3, wherein criteria by which to judge that the pressure member has come in contact with the workpiece are if an internal pressure of the rod-side pressure chamber is lower than an internal pressure of the head-side pressure chamber and if the pressure member is in a sufficiently close position to the workpiece.

5. (Original) A method according to claim 4, wherein the criteria includes if a time which has passed since the piston started moving exceeds a set time.

6.-8. (Canceled)